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PATENT REQUEST : STANDARD PATENT

We, being the person identified below as the Applicant, request the grant of a patent to the person identified below as the Nominated Person, for an invention described in the accompanying standard complete specification.

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Invention Title: A METHOD, SYSTEM AND CUSTOMER INTERFACE
MODULE FOR ENABLING TRIAL AND REGISTRATION
OF SOFTWARE PRODUCTS"

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ASSOCIATED PROVISIONAL APPLICATION DETAILS

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(12) PATENT ABSTRACT
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**A METHOD, SYSTEM AND CUSTOMER INTERFACE MODULE FOR ENABLING TRIAL AND
REGISTRATION OF SOFTWARE PRODUCTS**
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A method and system for enabling the trial and registration of software products is provided in which a vendor's software product (12) is combined with a customer interface module (10) to form a combined software object (14) which is supplied to a potential customer e.g. over the Internet, for trial use during a predetermined trial period prior to purchase by the customer. The customer interface module (10) is arranged to interact with the operating system (20) of the customer's computer (2) to generate a registration record of the software product which is stored in a registration file (40) and checked each time access to the software product (12) is requested. When the customer purchases the software product registration identification data is generated at a registration centre (3) and distributed to the customer for insertion by the customer interface module (14) into the registration file (40) to allow use of the software product beyond the trial period.

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COMPLETE SPECIFICATION
FOR A STANDARD PATENT

ORIGINAL

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**A METHOD, SYSTEM AND CUSTOMER INTERFACE
MODULE FOR ENABLING TRIAL AND REGISTRATION OF
SOFTWARE PRODUCTS**

Details of Associated Provisional Application:

PO 4801 filed 28 January 1997

The following statement is a full description of this invention, including the best method of performing it known to us

A METHOD, SYSTEM AND CUSTOMER INTERFACE MODULE FOR ENABLING TRIAL AND REGISTRATION OF SOFTWARE PRODUCTS

This invention relates to a method and system for enabling trial and registration of software products. The invention also relates to an interface module
5 for facilitating trial use, purchase and registration of software products.

One problem involved with the distribution and sale of computer software is that of allowing a potential customer to trial a software product before purchase whilst at the same time preventing unauthorized copying of the software product for use by others.

10 Another problem is that of allowing a potential customer to trial a software product before purchase whilst at the same time preventing continued use after the trial period has expired.

It is therefore desirable to provide a secure method and system which allows use of a software product for a trial period and then prevents further use of the
15 software product until the software product has been purchased by the customer. Once the product is purchased, a method for unauthorised copying is also desirable.

U.S. Patent No. 5563946 discloses a method and apparatus for enabling trial period use of software products in which a software product is reversibly functionally limited by encryption, recorded onto computer-accessible memory media
20 and loaded into a user's computer for use during a trial period. A temporary decryption key is provided from the source to the user to allow use of the encrypted software product for a predetermined trial interval and, at the end of the trial period, further access to the software is denied. The user must then take affirmative steps to contact the source to purchase a permanent decryption key which is communicated
25 to the user to allow unrestricted access to the encrypted software product.

A disadvantage of the method of U.S. Patent No. 5563946 is that it involves encryption of the software product. This can involve unnecessary time and expense before the software product is distributed to a potential customer. It is therefore desirable to provide a method and system for enabling use of a software product for

a trial period which does not involve encryption of the software product.

It is also desirable to provide an interface which facilitates communication with a customer's computer installed with a vendor's software product for the transmission of registration identification and for other functions.

5 According to one aspect of the invention there is provided a method of enabling the trial and registration of software products comprising the steps of:
combining a software product with a customer interface module to form a combined software object;

10 distributing the combined software object to a potential customer;
loading the combined software object into a computer of a potential customer wherein the customer interface module of the software object interacts with the customer's computer to create a registration record for the software product;
checking the registration record each time access to the software product is required wherein the customer interface module allows trial use of the
15 software product for a predetermined trial period;
generating registration identification data which allows use of the software product beyond said predetermined trial period after purchase and registration of the software product; and

distributing the registration identification data to the customer for
20 insertion by the customer interface module into the registration record.

According to another aspect of the invention, there is provided a system for enabling trial use and registration of software products comprising:

a customer interface module for combining with a vendor's software product to form a combined software object, the customer interface module being
25 programmed to interface with the customer's computer when the combined software object is installed on the customer's computer to create a registration record for the software product, the customer interface module being programmed to check details in the registration record when access to the software product is requested by the customer and to allow access to the software product during a predetermined trial
30 period; and

registration identification data generating means for generating registration identification data to be sent to the customer interface module for insertion into the registration record to allow access to the software product beyond said predetermined trial period after purchase and registration of the software product.

5 Preferably, the customer interface module is arranged to insert the registration record into an existing registration file in the operating system of the customer's computer. Where no appropriate registration file exists, however, the customer interface module may be arranged to create a registration file containing the
10 registration record in the operating system of the customer's computer. The registration record is preferably a permanent record which remains in the customer's computer after deletion of the software object to prevent re-trialling by deletion and re-installation of the software object.

A vendor of a software product may be supplied with the customer interface
15 module and appropriate combining means such as a program or instructions for combining the vendor's software product with the customer interface module on the vendor's computer. The customer interface module and combining means may be supplied to the vendor from a registration centre which contains the registration identification data generating means. Alternatively, a vendor may supply a software
20 product to the registration centre where the software product is combined with the customer interface module to form the combined software object which is then made available for distribution to potential customers.

According to another aspect of the invention there is provided a customer interface module for combination with a software product and programmed to
25 interface with a customer's computer to enable trial use and registration of the software product, said customer interface module including:

registration record generating means for creating a registration record for storage in the customer's computer, said record containing installation, usage and registration details of the software product;
30 trial period initiating means for initiating a trial period during which

use of the software product is permitted;

updating means for updating the registration record during the trial period;

- monitoring means for checking details in the registration record to
5 determine whether the trial period has expired each time access to the software product is required; and

means for receiving registration identification data which allows use of the software product after purchase or registration of the software product.

- The trial period may be determined in a number of different ways. For
10 instance, the customer interface module may include a counter for counting the number of trial usages of the software product, the trial period being arranged to expire after a predetermined number of usages. Alternatively, the predetermined trial period may be calculated to expire at a predetermined expiry date/time. In this
15 case, the customer interface module may include means for comparing the last run date/time of the software product with the current run date/time when use is requested, with use of the software product only being enabled if the last run date/time does not exceed the current run date/time. This prevents the customer resetting the current run date/time to an incorrect date in an attempt to use the software product after expiry of the trial period. In another embodiment, the trial
20 period may be calculated to expire when the software product has been used for a predetermined cumulative time over a number of usages. Further, a combination of two or more methods for determining expiry of the trial period may be used.

- When the customer interface module is combined with the software product to form the combined software object it may be concealed in the software object so
25 as to avoid detection by a customer.

- Preferably, the customer interface module includes means for invoking a purchase and registration function to facilitate purchase and registration of the software product. In the purchase and registration function, the customer is invited to purchase the software product and when the customer has purchased the software
30 product, the registration centre generates the registration identification data and

distributes the data to the customer. The registration centre preferably receives customer identification and machine identification details from the customer and utilizes the details to generate encrypted registration identification data for the software product.

- 5 The use of machine identification details of the customer's computer in generating the registration identification data reduces the risk of the software product being used in another computer if the software product is copied to another computer.

10 In accordance with another advantageous aspect of the invention, there is provided a customer interface module which is able to communicate directly with the server of a registration centre and/or of a vendor's computer via the Internet. This has the advantage of facilitating various functions, particularly the transmission of customer identification details and machine identification details to the registration centre and the transmission of the registration identification data from the
15 registration centre to the customer interface module installed on the customer's computer. In a particularly preferred embodiment, the customer interface module includes its own Web interface protocol, such as a hypertext transfer protocol (HTTP), which enables the customer interface module to communicate via the World
20 Wide Web of the Internet directly with a Web Server of a registration centre and/or a vendor's computer. Such a customer interface module can facilitate other functions, including the recordal and transmission of error and usage statistics of the software product and the addition of features to the software product after installation.

- 25 A preferred embodiment of a method, system and customer interface module in accordance with the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

· Figure 1 is a schematic diagram of a system for enabling trial and registration of software products;

- 30 Figure 2 is a block diagram of a customer interface module being combined with a software product to form a combined software object;

Figure 3 is a schematic block diagram of the software object including the customer interface module installed in a customer's computer;

Figure 4 is a schematic block diagram of a customer interface module of the invention;

5 Figure 5 is an example of a registration file created by the customer interface module;

Figure 6 is a flow chart of a procedure for downloading a software object into a customer's computer;

10 Figure 7 is a flow chart of an installation procedure for installing a software object in a customer's computer for trial use;

Figure 8 is a flow chart of the trial procedure for trial of a software product by a customer; and

Figure 9 is a flow chart of the registration procedure for the purchase and registration of a software product by a customer.

15 In Figure 1 there is shown a system for distributing software products which enables trial of the software products for a predetermined trial period prior to purchase, comprising a vendor's computer 1, a customer's computer 2 and a registration centre 3 which enables the software products to be purchased for use after expiry of the predetermined trial period. As shown in Figure 1, the vendor's
20 computer 1, the customer's computer 2 and a computer 4 of the registration centre 3 may communicate with each other via the World Wide Web (www) 9 of the Internet and, for this purpose, the customer's computer has a Web Browser 6 and each of the computers 1 and 3 has a respective Web Server 5 and 7.

The customer's computer 2 has the usual components of a personal computer
25 (PC), including an operating system 20, a hard disk drive 22, a keyboard 24 and a visual display unit (VDU) 26. The computers 1 and 4 of the vendor and registration centre 3 may have similar components, and the registration centre computer 3 also includes or is in communication with a database 8 which includes customer data, product data and registration data for software products distributed by the system to
30 customers.

When a vendor of a software product wishes to use the system of Figure 1 to distribute the software product for trial use by potential customer's prior purchase, the vendor contacts the registration centre 3 to register as a vendor, to obtain a product identification and to obtain a copy of a customer interface software module (CISM).

5 The vendor may contact the registration centre 3 by visiting the Web-site of the registration centre via the World Wide Web 9, and a copy of the CISM may be obtained by downloading the CISM from the World Wide Web. Alternatively, the vendor may contact the registration centre by electronic mail (e-mail) or by other
10 communication channels, e.g. telephone or facsimile, and a copy of the CISM may be supplied from the distribution centre to the vendor on a suitable memory media such as a floppy disk or CD-ROM.

Referring to Figure 2, after receiving a copy of the customer interface software module (CISM) 10, the vendor then combines the CISM 10 with the
15 software product 12 to form a combined software object 14 for distribution to potential customers.

The process for combining the CISM 10 with a software product 12 may vary for different computer operating systems and programming languages. The process essentially adds the CISM 10 to the vendor's software product in such a manner that
20 the CISM 10 is concealed in the combined software object 14 so as not to be detectable by a customer using the software product 12 of the combined software object 14.

The vendor then makes the combined or CISM-enabled software object 14 available for distribution to potential customers, for instance by installing the
25 software object in the Web server 5 of the vendor's computer 1 so that a potential customer can visit the vendor's Web site and download the combined software object 14 containing the vendor's software product 12 into the customer's computer 2. The CISM-enabled software object 14 may also be made available for distribution from the Web server 7 of the distribution centre 3 or from other Web
30 sites.

Further, the CISM-enabled software object may be recorded on a suitable memory media, such as a CD-ROM, and distributed to potential customers by any convenient channel of distribution.

Figure 3 shows the combined or CISM-enabled software object 14 installed in a customer's computer 2. The customer interface software module (CISM) 10 is pre-programmed to act as an interface between the operating system 20 and hard disk drive 22 of the customer's computer 2 and the Web server 7 of the registration centre 3 via the World Wide Web. For this purpose, the CISM may comprise a separate interface which is able to communicate via the World Wide Web by its own hypertext transfer protocol (HTTP). The CISM 10 is also programmed to create and update a registration record in an encrypted registration file 40 which is stored in the operating system 20. In the case of a Windows operating system, the encrypted registration file 40 is stored in the Windows registry of the customer's Windows system directory. The CISM 10 may also create a registration duplication (Reg.Dupe) 50 file which may be stored in the hard disk drive 22 of the customer's computer system. When a registration duplication (Reg.Dupe) file is created, it is preferably given a name which does not indicate its purpose but which discourages the customer from casually removing the file. The Reg.Dupe file is preferably a hidden, read-only file.

The components of the customer interface software module (CISM) 10 are shown schematically in Figure 4. The CISM 10 includes a server interface means 102 for communicating with a Web server, an operating system interface means 104 for communicating with the operating system 20 of a customer's computer, a registration file generator 106 and an encryption module 107 for generating and encrypting data which is stored in a registration file in the operating system 20 of the customer's computer, a trial period initiator 108 for initiating a predetermined trial period for use of the associated software product 12 when the CISM-enabled software object 14 is installed in the customer's computer, a registration file monitor 110 for checking the contents of the registration file 40, a product enabling means 112 for enabling use of the associated software product when the registration file

monitor 110 ascertains either that the predetermined trial period has not expired or that the registration file 40 contains appropriate registration identification data which allows the product to be used, and a message generating means 114 for generating messages to be displayed on the VDU 26 of the user's computer.

Referring to Figure 5, the registration file 40 may include any of the following data fields: an installation data field 41, containing data such as the date of installation and/or the date of first use of the software product;

a usage data field 42, containing data such as the number of times the software product is used (this is particularly of use when the predetermined trial

period is determined by a maximum number of usages of the software product);

an expiry data field 43, containing expiry details such as the predetermined expiry date of the trial period, or a predetermined number of usages for the trial period which, when exceeded, causes the software product to be disabled;

a product data field 44 containing product details specific to a particular software product;

a customer data field 45 containing customer identification details;

a machine data field 46 containing machine details specific to the particular computer containing the registration file 40, such as the customer's hard disk volume number; and

a registration data field 47 for containing registration details such as encrypted registration identification data for different software products.

A preferred method in which the system for enabling trial and purchase of software products operates will now be described with particular reference to Figures 6 to 9.

Referring to Figure 6, there is shown a process for downloading a vendor's software product into a customer's computer via the World Wide Web. When a potential customer becomes aware of a vendor's software products, step 60, the customer visits the Web site of the vendor's computer 1 or of the registration centre 3, step 61, where the software products are available for downloading via the World

Wide Web 9. The customer can then select a software product he/she wishes to

download, step 62, from a download page. The customer is then shown a download licence agreement. This licence agreement may mention that a customer identification file known as a "cookie" will be used to store the customer's details on the hard disk of the customer's computer 2. The customer must then agree to the conditions for downloading the software product, step 63, and then the customer's computer is checked to see whether an appropriate "cookie" or customer identification file exists on the customer's computer, step 64. If such a cookie exists, the customer identification details are returned by the customer's Web Browser 6 as part of the response to the Web Server 5, 7 of the vendor or registration centre, step 65. If no cookie exists, the Web Server 5, 7 obtains a new customer identifier, usually from the registration centre database and allocates the new customer identifier which is sent to the customer's computer, step 66. The customer identifier is transmitted as a hidden field in a download details form sent to the customer. Thus, the download details form will always contain a unique customer identifier, allocated either at this stage or previously where a cookie is discovered. The use of a "cookie" to store the customer's details is an optional feature and may be omitted in some applications. In another embodiment, the customer's download details may be captured and stored in the registration centre database.

A HTML (Hypertext mark-up language) download details form is then displayed in the customer's Web Browser, step 67 for the customer to agree to the existing contents of the download details form or to complete the form, if required. When the customer requests downloading to proceed, step 68, by issuing a submit instruction, the fields from the download details form are transferred to the Web Server, step 69, by a standard HTML facility. The fields are then packed up by the server-side CGI (Common Gateway Interface) script and re-transmitted with the returned web page. The fields are also saved on the server with the customer identifier from the download details form. Subsequently, the download details from the server are loaded into the registration centre database.

The software object containing the vendor's software product and the

customer interface software module (CISM) is then downloaded into the customer's computer in a single package, step 70, using FTP (File Transfer Protocol). This ends the downloading process. The customer would then continue with the installation process (Fig. 7).

- 5 It will, however, be appreciated that instead of the customer obtaining a CISM-enabled vendor's software product by downloading via the World Wide Web, a CISM-enabled vendor's software product may be distributed by a vendor and obtained by a potential customer in other ways, for instance by the CISM-enabled software product being recorded on a CD-ROM or other form of memory media.
- 10 Referring now to Figure 7, there is shown a process for installing a CISM-enabled software product for trial use on a customer's computer. When the customer obtains a CISM-enabled software product, e.g. by downloading or as a CD-ROM program package, the customer uses a setup and execute process (setup.exe) to install the customer interface service module (CISM) and set up the software
- 15 product of the combined software object, step 71. When the customer then attempts to run the vendor's software product, step 72, the CISM checks the operating system for any pre-existing registration file, step 73. In the case of a customer interface service module (CISM) programmed to co-operate with an operating system such as Windows 95, the CISM will look in the Windows Registry (or equivalent) for any
- 20 existing registration file in the Windows Registry, step 73a. In the case of other operating systems which do not have a registry equivalent to a Windows Registry, the CISM may have to create a registry for a registration file in the operating system. If no registration file is present in the operating system, CISM creates a registration file, step 74.
- 25 If a registration file is already present in the operating system of the customer's computer, the CISM checks in the registration file, step 75, to see whether it contains pre-existing registration identification data for the software product, step 75a. If the registration file contains registration identification data for the software product indicating that the customer has previously purchased the
- 30 software product, the software product is enabled for use by the customer on his/her

computer, step 170.

If the registration file does not contain pre-existing registration identification data, the CISM checks the registration file for installation details of the software product, step 76, to determine whether the software product has been installed previously, step 76a. If no previous installation details for the software product are found, the CISM records date and installation details for the software product and initiates a trial period for use of the software product, step 77.

The customer details, product details, installation details, registration details and other details created by CISM and recorded in the registration file are encrypted by the encryption module of CISM and use encrypted names and encrypted data so that they are not recognisable to the customer.

If the customer interface software module (CISM) determines that the software product has been installed previously in the customer's computer, the CISM then checks the registration file, step 78 to determine whether the trial period has expired, step 78a. If the trial period has not expired, the software product is enabled for trial use, step 79.

If the trial period has expired, the purchase procedure is initiated, step 90 (see Fig. 9).

The predetermined trial period may be time dependent, with the trial period commencing at the date and time of installation and expiring at a particular time on a predetermined later date, or use dependent, with the trial period consisting of a predetermined number of usages of the software product. For the latter, the CISM will include a counter which counts the number of trial usages of the software product. Alternatively, the trial period may be time and use dependent and, for instance, calculated to expire when the software product has been used for a predetermined cumulative time over any number of usages. Figure 8 illustrates one preferred process for determining whether or not a predetermined trial period has expired which is also intended to prevent an unauthorized extension of the trial period by the customer resetting the date in the operating system of his/her computer to an earlier date prior to requesting a use of the software product.

Referring to Figure 8, when a customer requests use of a CISM-enabled software product after its installation, step 80, the customer interface software module (CISM) compares the current date/time in the operating system with the predetermined expiry date/time in the registration file, step 81. If the current date/time exceeds the predetermined expiry date/time, step 82, the purchase procedure, step 90, is initiated. If, however, the current date/time does not exceed the expiry date/time, the CISM obtains the last run date/time for the software product from the registration file, and compares this value with the current run date/time, step 83. If the last run date/time is later than the current run date/time, step 84, the CISM refuses to enable the software product, step 85 and an error message is displayed to the customer, step 86.

If the last run date/time is earlier than the current date/time by no more than a predetermined interval t (say 5 seconds), step 87, the CISM refuses to run the software product, step 85, and again displays an error message to the customer, step 86. A typical error message is "system date has been changed since last run, or re-run too soon, try again later". The predetermined interval is an optional feature which may be used to ensure that the customer always uses a later date for each run, i.e. the program is not run from a batch file which resets the date to some fixed value just before the product is run. Even if the user continually resets the date, eventually the expiry date will be reached because each run date/time must be at least t seconds later than the last run date/time.

If the last run date/time is earlier than the current date/time (less the predetermined interval t), the CISM enables the software product for use, step 88 and the CISM overrides the last run date/time with the current date/time in the registration file, step 89.

The purchase and registration process automatically commenced by the customer interface software module (CISM) after expiry of the trial period will now be explained with reference to Figure 9. When the customer attempts to run the software product, the CISM automatically causes an expiry notice to be displayed to the customer, step 91 indicating that the vendor's software product has expired

and inviting the customer to purchase the software product. A typical message may read "Your current licence for this product has expired. Would you like to order it now? If so, click [OK]". If the customer has already obtained registration identification data for the software product, e.g. by mail, telephone, facsimile or e-mail, the customer will be invited to enter the registration identification data in his/her computer system. It is then encrypted by the CISM and recorded in the registration file.

If the customer elects to purchase the software product, step 92, (e.g. by selecting the OK button to purchase), the customer details are obtained by the CISM, if present in a cookie in the customer's computer, and the machine identification details and the product identification details are obtained from the registration file in the operating system of the customer's computer, step 93. These details are processed by CISM which creates an order form which is displayed to the customer, step 94. The existing customer details, product identification details, etc. are displayed on the form for the customer to compete or alter, if necessary. The customer may then cancel or proceed with the order, correcting and confirming the details on the order form and entering his credit card details, step 95. The order details are thus confirmed by the customer. If not confirmed, the process stops, step 191.

Once the order details are confirmed, the customer's identification details in the cookie in the customer's computer are updated, if necessary. The customer may then choose one of a plurality of dispatch methods for dispatching the order form to the registration centre, step 96. For instance, the customer may dispatch the order form by the World Wide Web, by e-mail, by facsimile or by mail. Usually, the method that is used to dispatch the order form will be used by the registration centre to return the registration identification data to the customer. If the Web dispatch method is selected CISM uses the Hypertext Transfer Protocol (HTTP) to send the form contents, which are preferably encrypted by secure sockets Layer (SSL) encryption, to the server 7 of the registration centre 3. In the e-mail dispatch method, CISM formats the information in the same way as for the HTTP and

dispatches the SSL encrypted order to a dedicated e-mail address on the server of the registration centre. Preferably, the CISM will be programmed to prevent duplicate orders containing the same customer identification details, the same product identification details and the same machine identification details to be sent to the registration centre within a 24 hour period.

5 Upon receipt at the registration centre, the order form is processed and the customer's credit card details validated, either by the registration centre or by another processing centre, step 97, and then registration identification details are generated by the registration centre and sent to the customer, step 98. The
10 registration identification details are then encrypted by the CISM and inserted into the registration file in the customer's operating system 99 as encrypted registration identification data so as to enable future use of the software product on the customer's computer, step 190.

In order for the registration identification details to be generated, the
15 information passed with the order form by CISM to the server of the registration centre may include the following:

- product release identification details;
- product offer identification details;
- the customer's hard disk volume number;
- 20 the customer's identification details;
- the customer's credit card details;
- the current date on the customer's machine (in order to prevent date fraud);
- the CISM version number; and
- the product feature set identification (in most cases this will be set to "all"
- 25 except in cases where the vendor does not wish to supply all features of the software product for use by the customer).

After receiving the information passed with the order form and verification of the customer's credit card details, the server of the registration centre, which includes appropriate CISM server programs, generates the registration identification
30 details for the software product. The details are encrypted, preferably by symmetric

key encryption, as an encrypted version of the following fields:

- the customer's hard disk volume number;
- the product release identification details;
- the product feature set identification;
- the customer identification; and

the product expiry date. (The product expiry date will usually be set to, say, 31 December, 2009, except when the vendor only wishes to licence his/her software product for a limited time period, for instance, 6 months).

The hard disk volume number is a unique identifier of the hard disk of a personal computer (PC) assigned at format time. In a Windows operating system this identifier can be accessed by Windows programs via the Windows application programming interface (API). As an integral part of the purchase process, the CISM accesses the hard disk volume number, appends it to the registration and product details, encrypts the whole string and stores the string as encrypted registration identification data in the registration file in the Windows registry. Whenever CISM runs, it accesses the hard disk volume number again from the disk, accesses and decrypts the registration identification data for the product from the registration file and compares the two volume numbers. If they do not match, indicating that the product has been installed onto a different machine or different hard disk than the one it was purchased for, CISM will not allow the software product to be run normally.

The use of the customer's hard disk volume number as a machine identification together with the vendor's software product identification details in the encrypted registration identification data assists in preventing unauthorized copying and use of the software product on another person's computer. However, it also makes it difficult for customers when they change their computers, re-install their operating systems and change their hard disks. Therefore, when a customer changes his/her computer or hard disk, it may be necessary for the customer to contact the registration centre, e.g. by e-mail, to advise his/her customer identification details and new hard disk volume number so that fresh registration identification data can

be sent to the customer.

Any convenient programming language, such as C++ or Delphi, may be used to produce the customer interface software module (CISM) which is a small, self-contained program. In one preferred form, CISM may be an OLE (Object Linking and Embedding) Control Extension (OCX), but installed into the product directory of the software product. This allows a separate version of CISM for each software product to be used as an anti-hacker precaution.

In order to minimize the impact of a hacker breaking encryption of CISM, different versions of CISM may be generated automatically (with different addresses and offsets) to prevent one hack to CISM being published as a patch to make all CISM enabled vendor products effectively free. Many different encryption algorithms and address structures may be used by the registration centre for this purpose. Preferably, CISM will use a fast symmetric-key encryption algorithm (rather than an asymmetric key algorithm) for speed.

It will be appreciated that the customer interface software module (CISM) described above may provide several other customer-related functions in addition to providing a secure method and system for enabling trial and registration of software products. As described above, CISM also assists in the downloading and ordering processes, particularly by providing an interface which enables direct communication between the customer's computer and the server of the registration centre. Also, many other pre- and post-registration functions may be supported by the CISM, including the recording of errors in a log file which can be reported automatically to the server of the registration centre and/or vendor's computer. Usage statistics and customer comments on the vendor's software product can also be recorded and reported back to the registration centre and/or vendor. It is also envisaged that additional features programmed by a vendor may be incorporated or added to CISM during a trial period, such as messages which encourage the customer to purchase the product at certain times when a discount is offered. The CISM may also be programmed to generate multimedia applications including graphics and/or sound in addition to text messages which are broadcast to the customer upon initiation of the

purchase procedures or at other times.

It will be appreciated that various modifications and/or alterations may be made to the specific embodiment described above without departing from the scope and spirit of the invention.

- 5 For the purposes of this specification, including the claims, the term "comprising" shall be taken to have the meaning "including".

CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method of enabling the trial and registration of software products comprising the steps of:
 - combining a software product with a customer interface module to form a
 - 5 combined software object;
 - distributing the combined software object to a potential customer;
 - loading the combined software object into a computer of a potential customer wherein the customer interface module of the software object interacts with the customer's computer to create a registration record of the software product in the
 - 10 customer's computer;
 - checking details in the registration record each time access to the software product is required wherein the customer interface module allows trial use of the software product for a predetermined trial period;
 - generating registration identification data which allows use of the software
 - 15 product beyond said predetermined trial period after purchase and registration of the software product; and
 - distributing the registration identification data to the customer for insertion by the customer interface module into the registration record.
2. A method according to claim 1 wherein the customer interface module is
- 20 arranged to insert the registration record into an existing file in the operating system of the customer's computer.
3. A method according to claim 1 wherein the customer interface module is arranged to create a registration file containing the registration record in the operating system of the customer's computer.
- 25 4. A method according to any one of the preceding claims wherein a vendor of a software product is provided with the customer interface module and combining

means for combining the vendor's software product with the customer interface module on a computer of the vendor.

5 5. A method according to claim 4 wherein the customer interface module and the combining means are supplied to the vendor from a registration centre where the registration identification data is generated.

6. A method according to any one of claims 1 to 3 wherein the software product is combined with the customer interface module at a registration centre where the registration identification data is generated.

10 7. A method according to any one of the preceding claims wherein a purchase and registration function is provided by the customer interface module to facilitate purchase and registration of the software product.

15 8. A method according to claim 7 wherein, in the purchase and registration function, when the purchaser has purchased the software product, the registration identification data is generated and distributed to the customer and inserted into the registration record to allow the customer to use the software product after expiry of the predetermined trial period.

9. A method according to any one of the preceding claims wherein customer identification details and product identification details are utilized to generate the registration identification data for the software product.

20 10. A method according to any one of the preceding claims wherein machine identification details of the customer's computer are utilized to generate the registration identification data for the software product.

11. A method according to any one of the preceding claims wherein the details used to generate the registration record are encrypted by the customer interface module to generate an encrypted registration identification data file.
12. A method according to any one of the preceding claims wherein the
5 predetermined trial period is determined by a maximum number of trial usages of the software product.
13. A method according to any one of claims 1 to 11 wherein the predetermined trial period is arranged to expire at a predetermined expiry date/time.
14. A method according to any one of claims 1 to 11 wherein the predetermined
10 trial period is calculated to expire when the software product has been used for a predetermined cumulative time over a number of usages.
15. A method according to claim 13 wherein, when a trial use of the software product is requested after installation, the customer interface module compares the last run date/time of the software product with the current run date/time of the
15 software product and only enables the software product for trial use if the last run date date/time does not exceed the current run date/time.
16. A method according to claim 15 wherein the customer interface module only enables the software product for trial use if the last run date/time is less than the current run date/time by more than a predetermined interval.
- 20 17. A method according to any one of the preceding claims wherein the registration record remains in the customer's computer after deletion of the software object to prevent re-trialling by deletion and re-installation of the software object.

18. A method according to any one of the preceding claims wherein the customer interface module is programmed to communicate directly with the server of a registration centre or vendor over the Internet.

19. A system for enabling trial use and registration of software products
5 comprising:

a customer interface module for combining with a vendor's software product to form a combined software object, the customer interface module being programmed to interface with a customer's computer when the combined software object is installed on the customer's computer to create a registration record for the
10 software product, the customer interface module being programmed to check details in the registration record when access to the software product is requested by the customer and to allow access to the software product during a predetermined trial period; and

registration identification data generating means for generating registration
15 identification data to be sent to the customer interface module for insertion into the registration record to allow access to the software product beyond said predetermined trial period after purchase and registration of the software product.

20. A system according to claim 19 wherein the customer interface module is arranged to insert the registration record into an existing file in the operating system
20 of the customer's computer.

21. A system according to claim 19 wherein the customer interface module is arranged to create a registration file containing the registration record in the operating system of the customer's computer.

22. A system according to claims 19 to 21 wherein the customer interface module
25 is programmed to invoke a purchase and registration function to facilitate purchase and registration of the software product.

23. A system according to any one of claims 19 to 22 wherein the registration identification data generating means is provided at a registration centre.
24. A system according to claim 23 wherein the registration centre utilizes customer identification details and product identification details to generate the registration identification data for the software product.
25. A system according to claim 23 or claim 24 wherein the registration centre utilizes machine identification details of the customer's computer to generate the registration identification data for the software product.
26. A system according to any one of claims 19 to 25 wherein the registration record created by the customer interface module is able to store one or more of the following: installation data, usage data, expiry data, product data, customer data, machine data and registration data.
27. A system according to claim 26 as appended to claim 23 wherein data from the registration record is transmitted to the registration centre for use in creating customer profiles.
28. A system according to any one of claims 19 to 27 wherein the customer interface module includes means for determining whether the predetermined trial period has expired, and enabling means for enabling use of the software product if the trial period has not expired.
29. A system according to claim 28 wherein the customer interface module includes a counter for counting the number of trial usages of the software product, and the predetermined trial period is arranged to expire after a predetermined number of usages.

30. A system according to claim 28 wherein the customer interface module includes means for comparing the last run date/time of the software product with the current run date/time of the software product and the customer interface module is arranged to enable the software product for trial use only when the last run date/time does not exceed the current run date/time.
31. A system according to claim 30 wherein the customer interface module only enables the software product for trial use if the last run date/time is less than the current run date/time by more than a predetermined interval.
32. A system according to claim 28 wherein the customer interface module includes means for recording the cumulative time the software product is used, and the predetermined trial period is calculated to expire when said cumulative time exceeds a predetermined value.
33. A system according to any one of claims 19 to 32 wherein the customer interface module includes encryption means for encrypting data to be stored in the registration file.
34. A system according to any one of claims 19 to 33 wherein the registration record is a permanent record which remains in the customer's computer after deletion of the software object to prevent re-trialling by deletion and re-installation of the software object.
35. A system according to any one of claims 23 to 25 or 27 wherein the customer interface module is able to communicate directly with the registration centre via the Internet.
36. A customer interface module for use in a system for enabling trial and registration of software products by customers, the system including a registration

centre for sending registration identification details to a customer enabling the customer to use a software product after expiry of a predetermined trial period, wherein the customer interface module includes interface means for communicating directly with a server at the registration centre via the Internet.

- 5 37. A customer interface module for combination with a software product and programmed to interface with a customer's computer to enable trial use and registration of the software product, said customer interface module including:
- 10 registration record generating means for creating a registration record for storage in the customer's computer, said record containing installation, usage and registration details of the software product;
- trial period initiating means for initiating a trial period during which use of the software product is permitted;
- updating means for updating the registration record during the trial period;
- 15 monitoring means for checking details in the registration record to determine whether the trial period has expired each time access to the software product is required; and
- means for receiving registration identification data which allows use of the software product after purchase or registration of the software product.
- 20 38. A customer interface module according to claim 37 wherein the customer interface module is arranged to insert the registration record into an existing registration file in the operating system of the customer's computer.
39. A customer interface module according to claim 37 wherein the customer interface module is arranged to create a registration file containing the registration record in the operating system of the customer's computer.
- 25 40. A customer interface module according to any one of claims 36 to 39 including a counter for counting the number of trial usages of the software product,

the trial period being arranged to expire after a predetermined number of usages.

41. A customer interface module according to any one of claims 36 to 40 including means for comparing the last run date/time of the software product with the current run date/time of the software product, the customer interface module
5 being arranged to enable the software product for trial use only when the last run date/time does not exceed the current run date/time.

42. A customer interface module according to claim 41 wherein the customer interface module only enables the software product if the last run date/time is less than the current run date/time by more than a predetermined interval.

10 43. A customer interface module according to any one of claims 36 to 42 including means for recording the cumulative time the software product is used, and the trial period is calculated to expire when said cumulative time exceeds a predetermined value.

44. A customer interface module according to claim 38 or claim 39 including
15 encryption means for encrypting data to be stored in the registration file.

45. A customer interface module according to any one of claims 36 to 44 further including means for invoking a purchase and registration function inviting the customer to purchase the software product.

46. A customer interface module according to any one of claims 37 to 45 further
20 including interface means for communicating with a server of a registration centre via the Internet.

47. A customer interface module according to claim 36 or claim 46 wherein the interface means includes its own Web interface protocol.

48. A customer interface module substantially as hereinbefore described with reference to Figures 4 and 5 of the accompanying drawings.
49. A system for enabling trial use of software products substantially as
5 hereinbefore described with reference to Figures 1 to 5 of the accompanying drawings.
50. A method of enabling the trial and registration of software products substantially as hereinbefore described with reference to the accompanying drawings.

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ABSTRACT

A method and system for enabling the trial and registration of software products is provided in which a vendor's software product (12) is combined with a customer interface module (10) to form a combined software object (14) which is supplied to a potential customer e.g. over the Internet, for trial use during a predetermined trial period prior to purchase by the customer. The customer interface module (10) is arranged to interact with the operating system (20) of the customer's computer (2) to generate a registration record of the software product which is stored in a registration file (40) and checked each time access to the software product (12) is requested. When the customer purchases the software product registration identification data is generated at a registration centre (3) and distributed to the customer for insertion by the customer interface module (14) into the registration file (40) to allow use of the software product beyond the trial period.

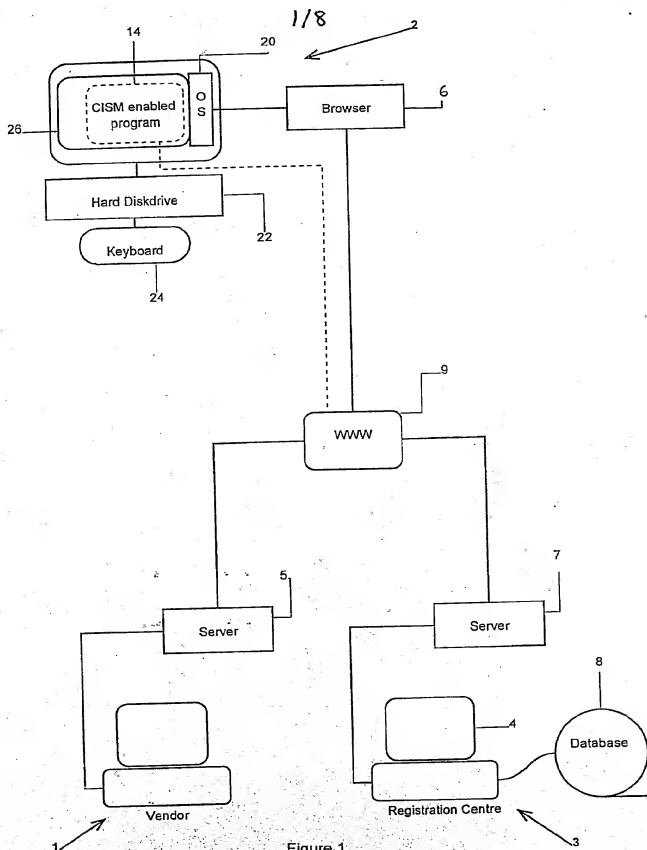


Figure 1

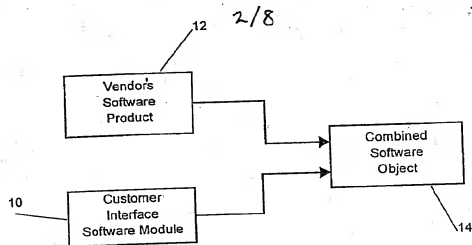


Figure 2

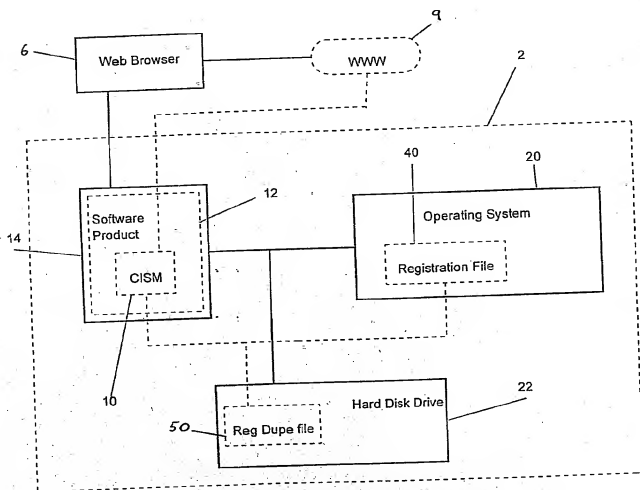


Figure 3

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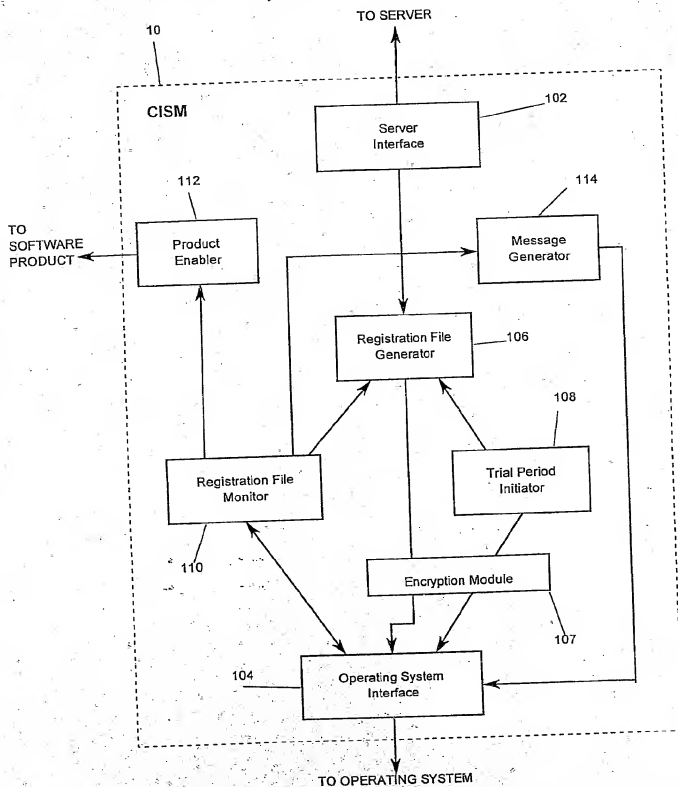


Figure 4

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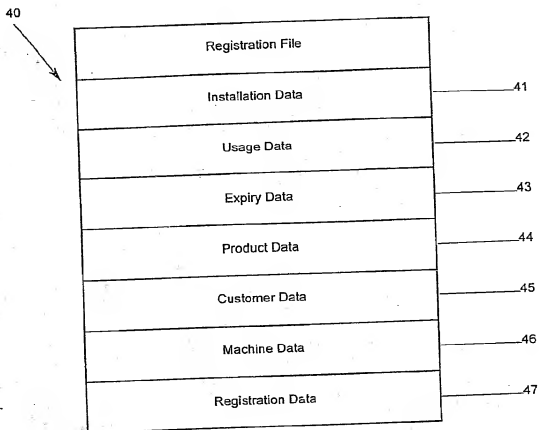


Figure 5

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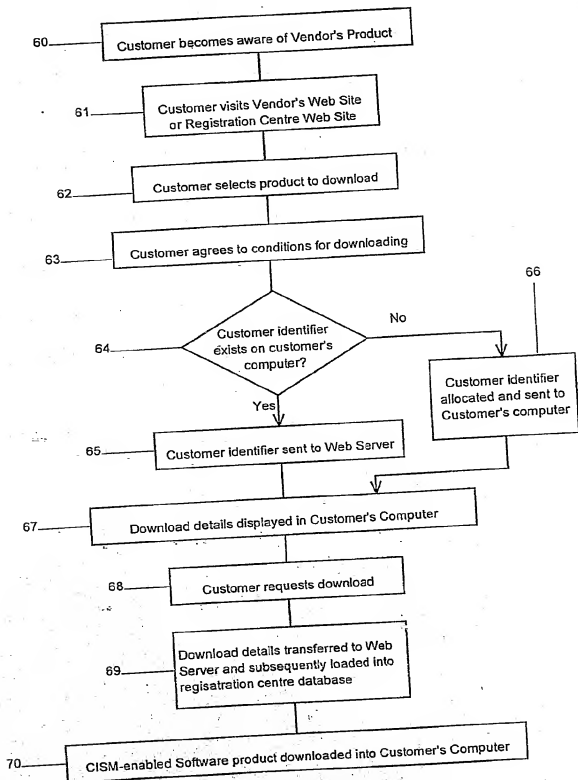


Figure 6

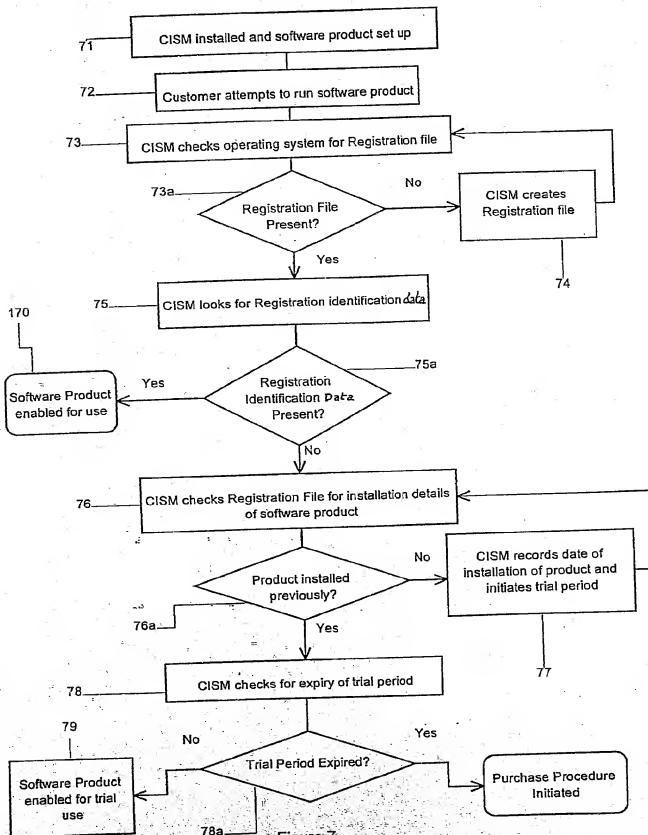


Figure 7

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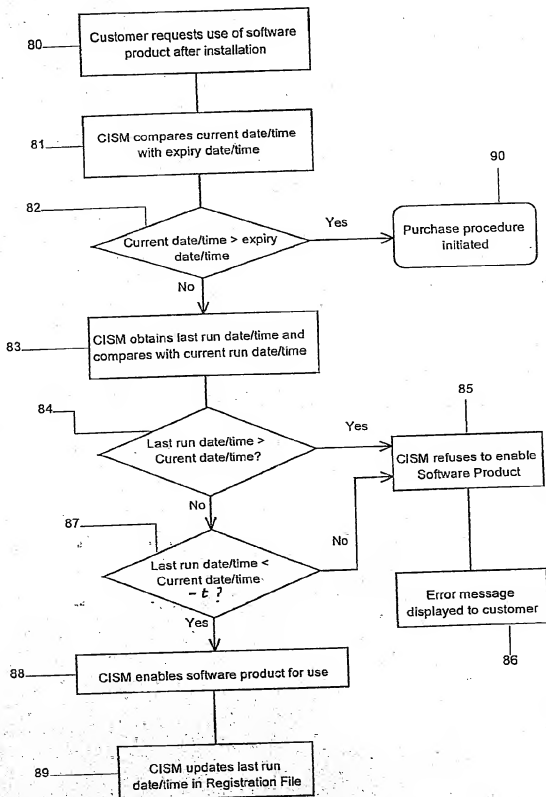


Figure 8

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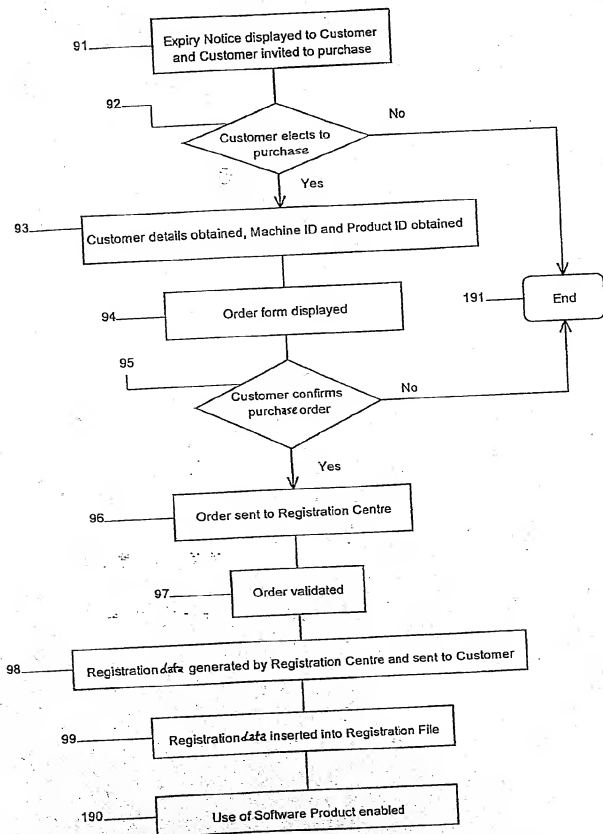


Figure 9